 Monitoring report form for CDM project activity (Version 09.0)			
Complete this form in accordance with the instructions attached at the end of this form.			
MONITORING REPORT			
Title of the project activity	11.3 MW renewable energy project for a grid system by K.M. Power (P) Limited		
UNFCCC reference number of the project activity	0750		
Version number of the PDD applicable to this monitoring report	02		
Version number of this monitoring report	01		
Completion date of this monitoring report	04-02-2022		
Monitoring period number	07		
Duration of this monitoring period	24/03/2011 to 05/02/2012 (Both days are included)		
Monitoring report number for this monitoring period	01		
Project participants	1. KM Power (P) Ltd. 2. Noble Carbon Credits Limited, Deutsche Bank AG 3. Mitsubishi Corporation 4. CM Capital Markets Holding, S.A.		
Host Party	India		
Applied methodologies and standardized baselines	AMS-I.D. ver. 9 - Grid connected renewable electricity generation		
Sectoral scopes	1 : Energy industries (renewable - / non-renewable sources)		
Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period	Amount achieved before 1 January 2013	Amount achieved from 1 January 2013 until 31 December 2020	Amount achieved from 1 January 2021
	23,427 tCO ₂	-	-
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	22,296 tCO ₂		

SECTION A. Description of project activity

A.1. General description of project activity

>>

The project activity is a bundled project comprising of three projects and generates electrical power using hydro potential available in Nippulavagu a tributary of Galeru river in Kurnool District of Andhra Pradesh state and exporting the generated electricity to the state owned power utility APTRANSCO.

The project is a run-of-the-river hydroelectric scheme that comprises a diversion structure, power canal, penstocks, powerhouse, and power evacuation system and tailrace canal. After power generation the water goes back into the river. The generated power will be exported to the grid through a 33/11 kV substations of APTRANSCO. In this process there are no greenhouse gas emissions or burning of any fossil fuels. Thus electricity is generated through sustainable means without causing any negative effect on the environment.

The details of major equipment of the project activity are furnished below:

S.No	Location of plant	Equipment details
1	Guntakandala small hydro plant	2x2000 KW Vertical Kaplan Turbine, Adjustable runner & indicating and recording instruments guide vanes, etc Synchronous generator of 3 Phase, 6.6 kV, k 15%, 50 c/s, 750 RPM, 0.8 PF and rated output 2000 kW Supplier: M/s Boving Fouress Ltd, Bangalore
2	Velpanur small hydro plant	2x1650 KW Vertical Kaplan Turbine, Adjustable runner & indicating and recording instruments guide vanes, etc Synchronous generator of 3 Phase, 6.6 kV, k 15%, 50 c/s, 750 RPM, 0.8 PF and rated output 2000 KW Supplier: M/s Boving Fouress Ltd, Bangalore
3	Madhavaram small hydro plant	2x2000 kW Vertical Kaplan Turbine, Adjustable runner & indicating and recording instruments guide vanes, etc Synchronous generator of 3 Phase, 6.6 kV, k 15%, 50 c/s, 750 RPM, 0.8 PF and rated output 2000 kW Supplier: M/s Boving Fouress Ltd, Bangalore

The Guntakandala small hydro project was commissioned in February 2002, Velpanuru small hydro project was commissioned in November 2002 and Madhavaram small hydro project was commissioned in December 2003 and units of all projects are in operation to till date.

The present monitoring report is chosen from 24/03/2011 to 05/02/2012. The net electricity exported to the State grid by the project activities is 30.952 GWh and the net emission reductions are of 23,427 tCO₂e for the present monitoring period.

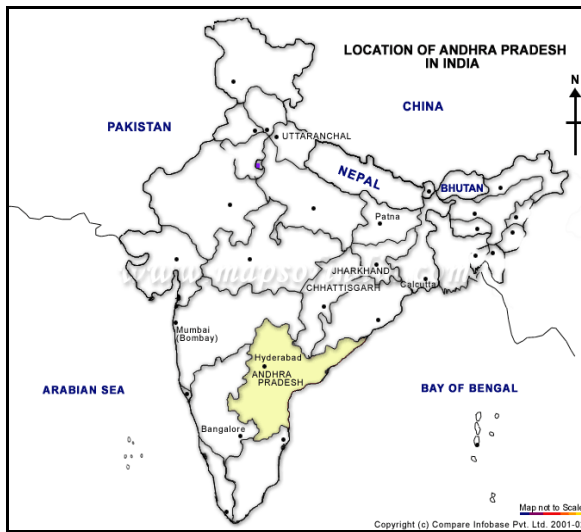
A.2. Location of project activity

>>

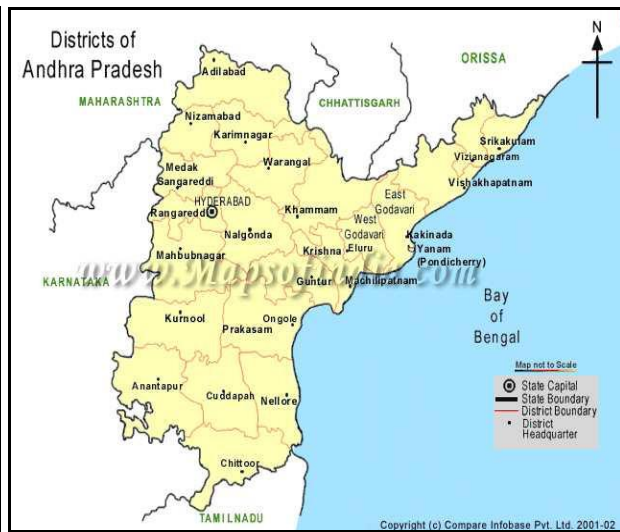
Host Party : India
State : Andhra Pradesh
District : Kurnool
Village : Guntakandla, Velpanuru, Madhavaram

Geographical Coordinates¹ : 15° 50' 0" North and 78° 3' 0" East

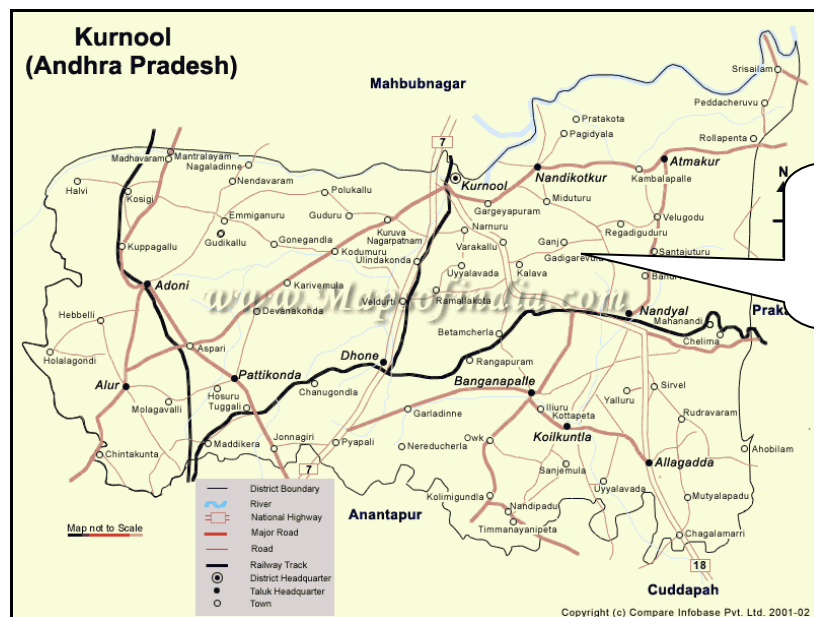
The physical location of the project activity is shown below:-



Map1: India



Map2: Andhra Pradesh



Map3: Location of the Project activity

¹ <http://www.maplandia.com/india/andhra-pradesh/kurnool/kurnool/>

A.3. Parties and project participants

Parties involved	Project Participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
India	KM Power (P) Ltd.	No ²
United Kingdom of Great Britain and Northern Ireland	Noble Carbon Credits Limited, Deutsche Bank AG	No ³
Japan	Mitsubishi Corporation	No ⁴
Switzerland	CM Capital Markets Holding, S.A.	No ⁵

A.4. References to applied methodologies and standardized baselines

>>

Methodology⁶ : AMS-I.D. ver. 9 - Grid connected renewable electricity generation**A.5. Crediting period type and duration**

>>

06/02/2002 to 05/02/2012 (Fixed)

SECTION B. Implementation of project activity**B.1. Description of implemented project activity**

>>

The technology or power generation process using hydro resources is converting the potential energy available in the water flows into mechanical energy using hydro turbines and then to electrical energy using alternators. The generated power will be transformed to match the nearest grid sub-station for proper interconnection and smooth evacuation of power.

The generated power is being exported to the grid through a 33/11 kV substation located at Velugodu village at a distance of 5 km in respect of Guntakandala SHP and Velpanur SHP and Gadivamula village in respect of Madhavaram SHP located at a distance of 11 km from the plant location. The details of the project operations during this monitoring period are presented below:-

		Total hours (Hr:MM)	Running hours (Hr:MM)	Non-running hours (Hr:MM)
Guntakandala	Unit-I	7670:00	3107:45	4562:15
	Unit-II	7670:00	4762:55	2875:05
Velpanuru	Unit-I	7670:15	2761:05	4909:10
	Unit-II	7670:15	5206:20	2463:55
Madhavaram	Unit-I	7656:00	3130:50	4525:10
	Unit-II	7656:00	3656:35	3999:25

Detailed technical process diagram of the project activity is furnished below:-

² <http://cdm.unfccc.int/Projects/DB/DNV-CUK1162557680.05/view>

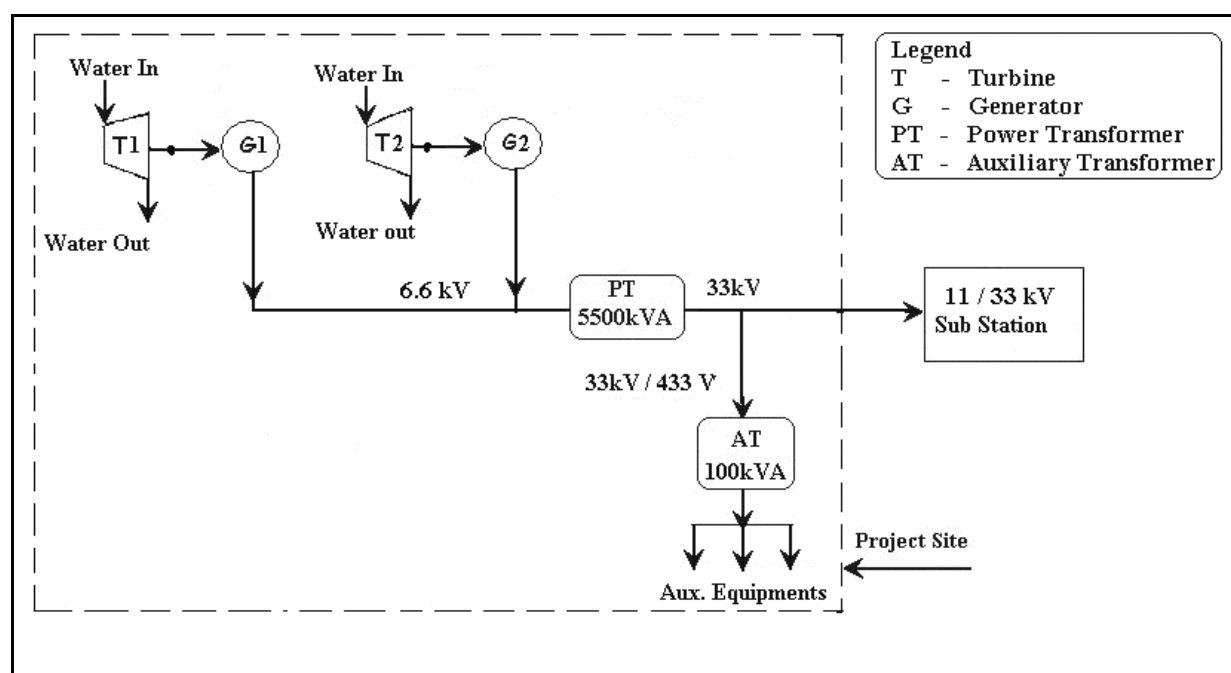
³ <http://cdm.unfccc.int/Projects/DB/DNV-CUK1162557680.05/view>

⁴ <http://cdm.unfccc.int/Projects/DB/DNV-CUK1162557680.05/view>

⁵ <http://cdm.unfccc.int/Projects/DB/DNV-CUK1162557680.05/view>

⁶

http://cdm.unfccc.int/filestorage/C/D/M/CDMWF_AM_2GHDC30TPDJK04LS07SY07X9MFZRG5/AMS_I.D._ver09.pdf?t=UnR8bTduZzkfDDWVYYQDWY6oTh5O4cPiVv



B.2. Post registration changes

B.2.1. Temporary deviations from registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

>>

There is no temporary deviation from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents during the current monitoring period.

B.2.2. Corrections

>>

There is no correction during the current monitoring period.

B.2.3. Changes to the start date of the crediting period

>>

There is no changes to start date of crediting period during the current monitoring period.

B.2.4. Inclusion of monitoring plan

>>

There is no inclusion of monitoring plan during the current monitoring period.

B.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

>>

There is no permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents Changes to project design during the current monitoring period

B.2.6. Changes to project design

>>

NA

B.2.7. Changes specific to afforestation or reforestation project activity

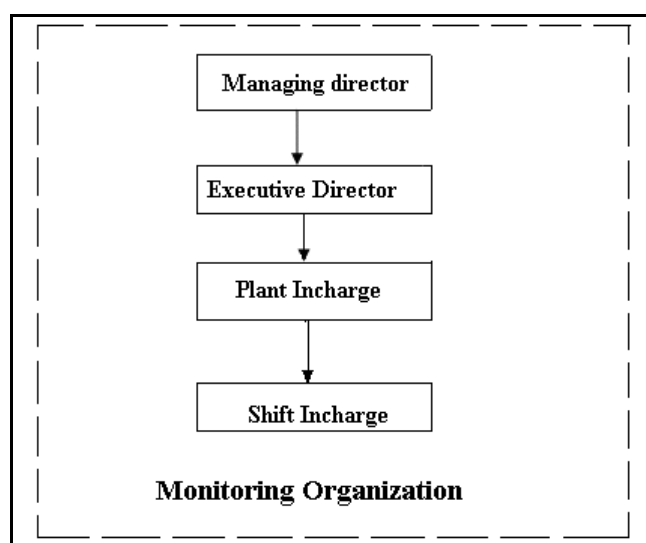
>>

NA

SECTION C. Description of monitoring system

>>

A CDM team has been formed in KM Power (P) Limited (KMPPL) for monitoring and verification of all the monitoring parameters as per the guidelines formulated by the management of KMPPL. Qualified and trained people monitor the parameters and emission reduction calculations. KMPPL is the sole agency responsible for implementation and monitoring of the project activity. The monitoring organisation structure is shown below:

**Roles and Responsibilities****Managing Director**

Managing Director is responsible for the total monitoring plan. The Managing Director will examine the reports generated by the ED. He also examines the internal audit reports prepared by internal auditor and also suggest/modify the structure of report and data recording formats as and when required.

Executive Director (ED)

The Executive Director will examine the reports generated by the Plant Incharge with respect to the monthly electricity generated, exported and annual emission reduction calculations as per the monitoring plan.

Plant Incharge

The General Manager is responsible for the electricity generations at project site. He will review the monitored parameters for correctness and take corrective measures in case of minor errors in the monitored data. He also prepares a daily summary on project operation & electricity generations and report to Managing Director for any abnormality. The calibration of the meters installed will be taken care by him as per the monitoring plan.

Shift Incharge

Shift Incharge is responsible for recording the total electricity generation, auxiliary consumption, electricity export, electricity import, plant shut down times, etc. The monthly reports will be generated and submitted to the General Manager for verification and emission reduction calculations.

Training procedures for KM Power personnel:

Plant Incharge will prepare Annual training program calendar in consultation with the Managing Director (MD). MD will identify the faculties & arrange for the training as per training schedule. The training details of all the employs will be maintaining in the training record registry.

Calibration

Main and Check meters are being tested and certified at least once in year against an accepted laboratory standard meter in accordance with electricity standards. The calibration of the meters is carried out by ETDC (Electronics Test & Development Centre). The meters are deemed to be working satisfactorily if the errors are within the meter specifications of 0.2 accuracy class.

The energy meters of Gross electricity generation and Auxiliary consumption of respective power houses are being tested once in year by reputed third party agency. All the calibration test of reports of the energy meters used during the monitored period has been provided to DOE for verification.

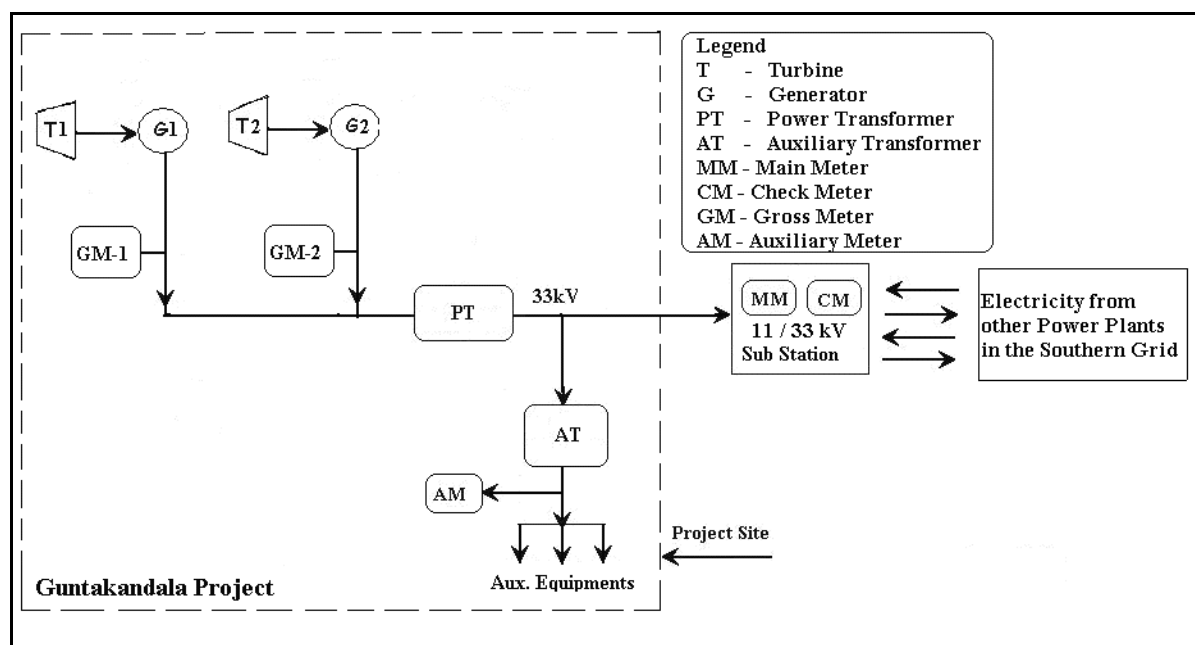
Methods of data transfer and archiving policy

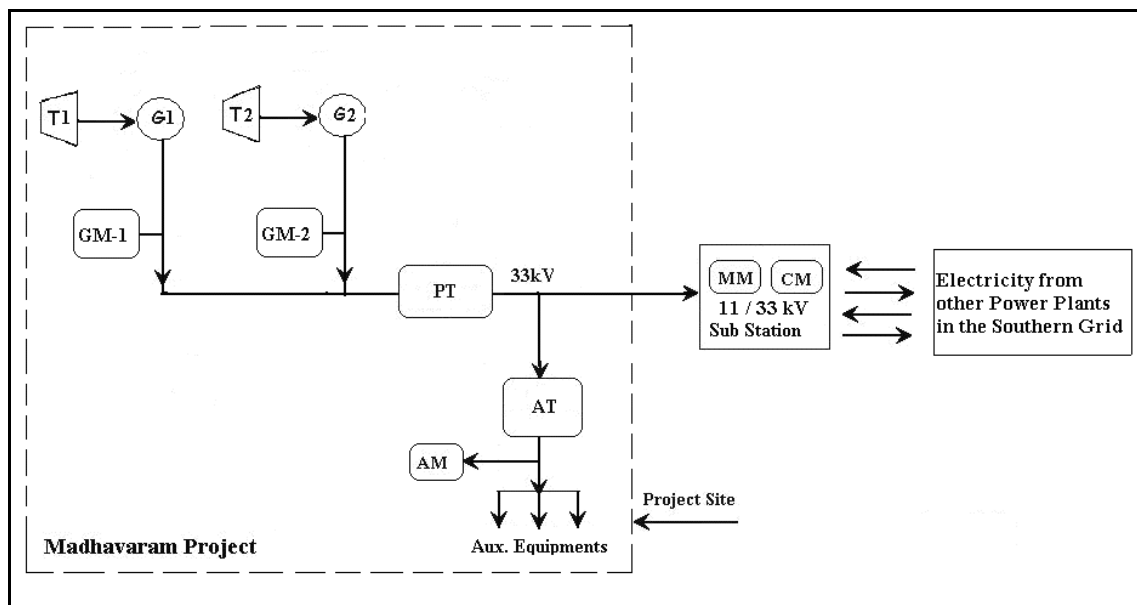
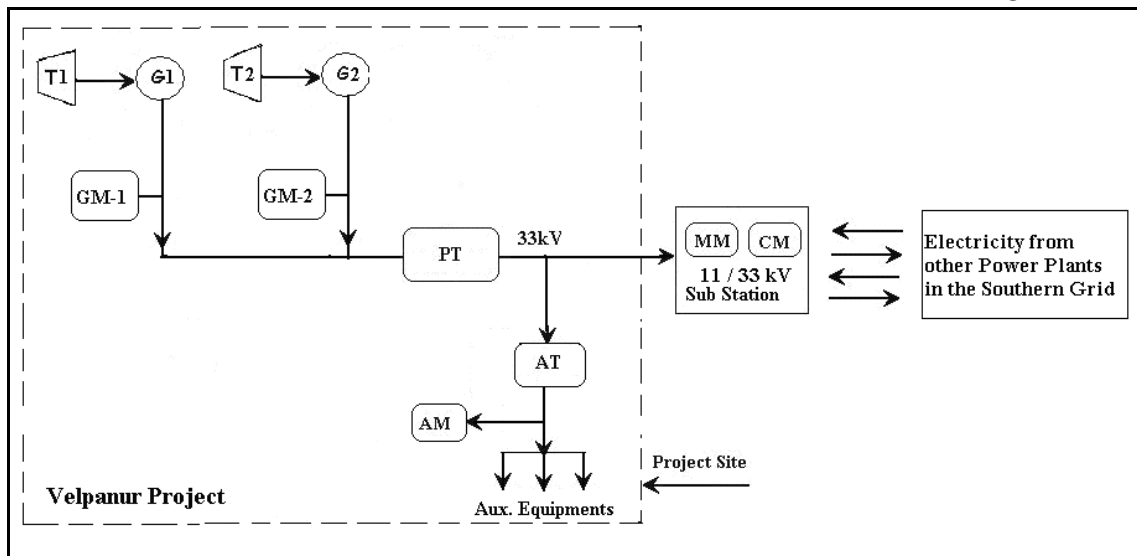
The data will be recorded both at the project site as well as at the grid substation, which is under the control of APTRANSCO. The energy will be measured using calibrated meters and recorded at the APTRANSCO sub-station. Records of measurements will be used for verification of emission reductions. Sales bills / receipts may be compared as an alternative proof of the power exported to the grid.

The responsibility of storage and archiving of information in good condition also lies with the designated person in charge. The person in charge will undertake periodic verifications and onsite inspections to ensure the quality of the data collected by the team and initiate steps in case of any abnormal conditions.

As part of emergency preparedness, the project activities have been provided necessary provisions include standby meters, fire fighting system, etc.

The project had been provided the monitoring equipments which were described in the registered CDM-PDD and the line diagram for the monitoring parameters for three units are furnished below:





SECTION D. Data and parameters

D.1. Data and parameters fixed ex-ante

>>
N.A

D.2. Data and parameters monitored

Data/Parameter	$EG_{gross,y}$
Unit	kWh
Description	Gross Generation
Measured/calculated/ Default	On-site measurement
Source of data	Daily generation log sheets
Value(s) of monitored parameter	31,547,470 (Details are provided in Annex-1)
Monitoring equipment	Details are provided in Table-2
Measuring/reading/recording frequency	Measured hourly and aggregated for daily.
Calculation method (if applicable)	Left Blank Intentionally
QA/QC procedures	Meters are recalibrated periodically conform to national standard at third party reputed testing lab
Purpose of data/parameter	Data is used to cross verify with Joint Meter Readings
Additional comments	Left Blank Intentionally

Data/Parameter	$EG_{Auxiliary,y}$
Unit	kWh
Description	Auxiliary consumption
Measured/calculated/ Default	On-site measurement
Source of data	Daily generation log sheets
Value(s) of monitored parameter	160,796 (Details are provided in Annex-1)
Monitoring equipment	Details are provided in Table-2
Measuring/reading/recording frequency	Measured hourly and aggregated for daily.
Calculation method (if applicable)	Left Blank Intentionally
QA/QC procedures	Meters are recalibrated periodically conform to national standard at third party reputed testing lab.
Purpose of data/parameter	Left Blank Intentionally
Additional comments	Left Blank Intentionally

Data/Parameter	$EG_{Import,y}$
Unit	kWh
Description	Power Import
Measured/calculated/ Default	Measured at Grid interconnection point
Source of data	Monthly Joint Meter Readings Reports certified by APTRANSCO officials
Value(s) of monitored parameter	22,400 (Details are provided in Annex-1)
Monitoring equipment	Details are furnished in Table-1
Measuring/reading/recording frequency	Monthly recording
Calculation method (if applicable)	Left Blank Intentionally
QA/QC procedures	Meters are recalibrated & inspected periodically by APTRANSCO. Records of measurements are used for verification of emissions reductions. Sales bills / receipts are used for cross verification.
Purpose of data/parameter	Data is used for calculating emission reductions
Additional comments	Left Blank Intentionally

Data/Parameter	$EG_{Export,y}$
Unit	kWh
Description	Power Export
Measured/calculated/ Default	Measured at Grid interconnection point
Source of data	Monthly Joint Meter Readings Reports certified by APTRANSCO officials
Value(s) of monitored parameter	30,974,800 (Details are provided in Annex-1)
Monitoring equipment	Details are furnished in Table-1
Measuring/reading/recording frequency	Monthly recording
Calculation method (if applicable)	Left Blank Intentionally
QA/QC procedures	Meters are recalibrated & inspected periodically by APTRANSCO. Records of measurements are used for verification of emissions reductions. Sales bills / receipts are used for cross verification.
Purpose of data/parameter	Data is used for calculating emission reductions
Additional comments	Left Blank Intentionally

Data/Parameter	EFy
Unit	tCO ₂ /GWh
Description	Grid Emission Factor (EF)
Measured/calculated/ Default	Calculated
Source of data	Central Electricity Authority (CEA), is a government body which calculates the grid emission factors. https://cea.nic.in/cdm-co2-baseline-database/?lang=en
Value(s) of monitored parameter	757.35 (Version-08 & January-2013) (Details are provided in Annex-2) Weighted Average Emissions Rate (excl. Imports) for the most recent year (2011-2012) available for Southern Region grid. The same has been considered based on the clarification given on approved methodologies (AM CLA 0038) https://cdm.unfccc.int/methodologies/PAmethodologies/clarifications/12129.
Monitoring equipment	Left Blank Intentionally
Measuring/reading/recording frequency	Yearly
Calculation method (if applicable)	Left Blank Intentionally
QA/QC procedures	This data item is required for estimating the baseline emissions and emission reductions.
Purpose of data/parameter	Data is used for calculating emission reductions
Additional comments	Left Blank Intentionally

Table- 1: Main Meter & Check Meter Recalibration Test Details

<u>Guntakandala Power House</u>		
Description	Main Meter	Check Meter
Period for which meters were used	24/03/2011 to 05/02/2012	24/03/2011 to 05/02/2012
Serial No.	01988399	06607932
Type	Tri-vector meter	Tri-vector meter
Accuracy class	0.2	0.2
Calibration frequency	Annual	Annual
Date of calibration	12/10/2010	12/10/2010
Validity	11/10/2011	11/10/2011
Date of recalibration	20/10/2011	20/10/2011
Testing Agency	Electronics Test & Development Centre (ETDC), Govt. Of India, APCPDCL.	

<u>Velpanur Power House</u>		
Description	Main Meter	Check Meter
Period for which meters were used	24/03/2011 to 05/02/2012	24/03/2011 to 05/02/2012
Serial No.	01988419	01988431
Type	Tri-vector meter	Tri-vector meter
Accuracy class	0.2	0.2
Calibration frequency	Annual	Annual
Date of calibration	09/11/2010	09/11/2010
Validity	08/11/2011	08/11/2011
Date of recalibration	22/12/2011	22/12/2011
Testing Agency	Electronics Test & Development Centre (Etdc), Govt. Of India, APCPDCL.	

<u>Madhavaram Power House</u>		
Description	Main Meter	Check Meter
Period for which meters were used	24/03/2011 to 05/02/2012	24/03/2011 to 05/02/2012
Serial No.	07033700	07033710
Type	Tri-vector meter	Tri-vector meter
Accuracy class	0.2	0.2
Calibration frequency	Annual	Annual
Date of calibration	07/04/2010	07/04/2010
Validity	06/04/2011	06/04/2011
Date of recalibration	18/04/2011	18/04/2011
Testing Agency	Electronics Test & Development Centre (ETDC), Govt. Of India, APCPDCL.	

During the monitored period, the energy meters (both Main meter & Check meter) were recalibrated for reliability & improve accuracy of the electricity metering. The meters are being tested by Electronics Test & Development Centre (ETDC), Govt. of India under the supervision of state utility testing agency. Copies of calibration test reports are being provided to DOE for verification.

During the monitored period, some of the energy meters were positioned beyond calibration due date (one year from the date of calibration test). The emissions due to delayed calibration period are estimated as per guideline i.e. Annex 60 of EB 52 and the details are furnished below:-

Guntakandala Power House			
Monitoring Period		24/03/2011 to 05/02/2012	
		Main meter	Check meter
Installed meter S.No. during this period		01988399	06607932
Date of calibration		12/10/2010	
Validity		11/10/2011	
Date of next calibration		20/10/2011	
% of error indicated in the test report		Observed error within the specified limits	
Max. permissible error of the energy meter		0.2%	
Delayed calibration period		12/10/2011 to 19/10/2011	
Adjusted the Monthly Joint Energy Meter Readings for the period [Electricity adjusted due to delayed calibration test]		24/09/2011 to 24/10/2011	
		Export	Import
Electricity <small>Measured</small>	kWh	2,290,400	500
Adjusted on account of delayed calibration	kWh	2,285,819	501
Net electricity displaced <small>Measured</small>	kWh	2,289,900	
Net electricity displaced <small>Adjusted</small>	kWh	2,285,318	
Difference in Net electricity displaced		4,582	
Baseline emission factor		757.35	
Emissions - Calculated		3.47	
Considered		4	

Velpanur Power House			
Monitoring Period		24/03/2011 to 05/02/2012	
		Main meter	Check meter
Installed meter S.No. during this period		01988419	01988431
Date of calibration		09/11/2010	
Validity		08/11/2011	
Date of next calibration		22/12/2011	
% of error indicated in the test report		Observed error within the specified limits	
Max. permissible error of the energy meter		0.2%	
Delayed calibration period		09/11/2011 to 21/12/2011	
Adjusted the Monthly Joint Energy Meter Readings for the period [Electricity adjusted due to delayed calibration test]		24/10/2011 to 22/12/2011	
		Export	Import

<u>Velpanur Power House</u>			
Monitoring Period		24/03/2011 to 05/02/2012	
Electricity <small>Measured</small>	kWh	2,849,700	200
Adjusted on account of delayed calibration	kWh	2,844,001	200.40
Net electricity displaced <small>Measured</small>	kWh	2,849,500	
Net electricity displaced <small>Adjusted</small>	kWh	2,843,800	
Difference in Net electricity displaced	kWh	5,700	
Baseline emission factor	tCO ₂ /GWh	757.35	
Emissions - Calculated	tCO ₂ e	4.32	
Considered	tCO ₂ e	5	

<u>Madhavaram Power House</u>			
Monitoring Period		24/03/2011 to 05/02/2012	
		Main meter	Check meter
Installed meter S.No. during this period		07033700	07033710
Date of calibration		07/04/2010	
Validity		06/04/2011	
Date of next calibration		18/04/2011	
% of error indicated in the test report		Observed error within the specified limits	
Max. permissible error of the energy meter		0.2%	
Delayed calibration period		07/04/2011 to 17/04/2011	
Adjusted the Monthly Joint Energy Meter Readings for the period [Electricity adjusted due to delayed calibration test]		24/03/2011 to 23/04/2011	
		Export	Import
Electricity <small>Measured</small>	kWh	524,700	1500
Adjusted on account of delayed calibration	kWh	523,651	1503
Net electricity displaced <small>Measured</small>	kWh	523,200	
Net electricity displaced <small>Adjusted</small>	kWh	522,148	
Difference in Net electricity displaced	kWh	1,052	
Baseline emission factor	tCO ₂ /GWh	757.35	
Emissions - Calculated	tCO ₂ e	0.80	
Considered	tCO ₂ e	1	

**Table- 2: Gross Energy Generation Meter & Auxiliary Power Consumption Meter
Recalibration Test Details**

Guntakandala Power House			
Description	Gross Energy Meter		Aux. Power
	Unit -1	Unit -2	
Serial No.	A3211033	A3211032	F40/853-502
Type	Energy meter		Energy meter
Accuracy class	0.2		1.0
Calibration frequency	Annual		
Date of last calibration	13/07/2010 & 05/07/2011		
Validity	12/07/2011 & 04/07/2012		
Testing Agency	TRANSERECT Testing and Commissioning Engineers Pvt Ltd.,		

Velpanur Power House			
Description	Gross Energy Meter		Aux. Power
	Unit -1	Unit -2	
Serial No.	A3220424	A3220426	F40/853-502/1
Type	Energy meter		Energy meter
Accuracy class	0.2		1.0
Calibration frequency	Annual		
Date of last calibration	14/07/2010 & 06/07/2011		
Validity	13/07/2011 & 05/07/2012		
Testing Agency	TRANSERECT Testing and Commissioning Engineers Pvt Ltd.,		

Madhavaram Power House			
Description	Gross Energy Meter		Aux. Power
	Unit -1	Unit -2	
Serial No.	B3281357	B3281359	191747/104806-4909
Type	Energy meter		Energy meter
Accuracy class	0.2		1.0
Calibration frequency	Annual		
Date of last calibration	15/07/2010 & 07/07/2011		
Validity	14/07/2011 & 06/07/2012		
Testing Agency	TRANSERECT Testing and Commissioning Engineers Pvt Ltd.,		

During the monitored period, the energy meters of Gross generation and Auxiliary consumption were removed and installed other calibrated meters for periodic recalibration test for reliability & improve accuracy of the electricity metering.

D.3. Implementation of sampling plan

>>

Data and parameters monitored described in Section D.2 above is not determined by a sampling approach.

SECTION E. Calculation of emission reductions or net anthropogenic removals

E.1. Calculation of baseline emissions or baseline net removals

>>

The baseline emissions are calculated based on the net energy provided to the grid (in GWh/year) and an emission factor for the displaced grid electricity (in tCO₂/GWh).

$$BE_y = EG_y * EF_y$$

Where,

$$\begin{aligned} EG_y &= \text{The net electricity exported to the grid system during the year } y \\ EF_y &= \text{The emission factor of the grid to which the project exports electricity.} \end{aligned}$$

The baseline emission factor in year *y* is calculated as the weighted average of current generation mix emission factor. The project has been considered the validated baseline emission factor (Ex-post) i.e. 757.35 tCO₂/GWh and the same is used for calculation of baseline emission for this project activity during this monitoring period.

Therefore,

$$\begin{aligned} BE_y &= 30.952 * 757.35 \\ &= 23,440 \text{ tCO}_{2e} \end{aligned}$$

E.2. Calculation of project emissions or actual net removals

>>

The project emissions from the project activity are considered as three.

E.3. Calculation of leakage emissions

>>

Leakage is not considered from the project activity.

E.4. Calculation of emission reductions or net anthropogenic removals

	Baseline GHG emissions or baseline net GHG removals (t CO ₂ e)	Project GHG emissions or actual net GHG removals (t CO ₂ e)	Leakage GHG emissions (t CO ₂ e)	GHG emission reductions or net anthropogenic GHG removals (t CO ₂ e)			
				Before 01/01/ 2013	From 01/01/ 2013 until 31/12/ 2020	From 01/01/ 2021	Total amount
Total	23,440	3	0	23,427	-	-	23,427

Total baseline emissions	: 23,440 tCO ₂ e
Total project emissions (DG set) ⁷	: 3 tCO ₂ e
Leakage	: 0 tCO ₂ e
Emissions due to delay calibration	: 10 tCO ₂ e
Total emission reductions	: 23,427 tCO ₂ e

***Note:** After deduction of **3 t CO₂e** towards project emissions and **10 t CO₂e** towards Emissions due to delay in calibration, the total emission reductions from the project activity are **23,427 t CO₂e**.

⁷ The Detailed calculations are provided in Annexure-4

E.5. Comparison of emission reductions or net anthropogenic removals achieved with estimates in the registered PDD

Amount achieved during this monitoring period (t CO ₂ e)	Amount estimated ex ante for this monitoring period in the PDD (t CO ₂ e)
23,427	22,296

E.5.1. Explanation of calculation of “amount estimated ex ante for this monitoring period in the PDD”

As per registered CDM-PDD the estimated net emission reductions per year (i.e. 365 days) is 25,511 tCO₂e. Whereas the present MR is considered only for 11 months (i.e. 319 days), Therefore the estimated net emission reductions for the period of 11 months is calculated as $(25,511/365)*319 = 22,296$ tCO₂e.

E.6. Remarks on increase in achieved emission reductions

>>

The net emission reduction for the reported period is 5.07% more than the estimated in the registered PDD. The reasons for the excess net electricity generations are:-

- Excess rainfall in the catchments area of river
- Power generation during the lean / off season

E.7. Remarks on scale of small-scale project activity

The project activity remains as a Small scale project activity for the entire crediting period.

Consolidated report of monitoring parametersGUNTAKANDALA POWER HOUSE

Monitored Period	Gross Electricity Generated, kWh			Aux. Power Consumption, kWh		Electricity Exported to Grid	Electricity Imported from Grid	Net Electricity Exported to Grid	
	UNIT-1	UNIT-2	TOTAL	Measured at Project site (See Note-1)	Calculated (See Note-2)	kWh	kWh	kWh	GWh
24/03/11 to 23/04/11	25,960	578,750	604,710	5,355	14,510	590,900	700	590,200	0.5902
23/04/11 to 23/05/11	0	284,780	284,780	3,572	8,780	276,800	800	276,000	0.2760
23/05/11 to 24/06/11	0	0	0	604	1,100	0	1,100	-1,100	-0.0011
24/06/11 to 23/07/11	0	0	0	527	1,200	0	1,200	-1,200	-0.0012
23/07/11 to 24/08/11	446,610	537,350	983,960	4,562	21,260	963,600	900	962,700	0.9627
24/08/11 to 24/09/11	1,242,900	1,450,650	2,693,550	9,406	59,250	2,634,700	400	2,634,300	2.6343
24/09/11 to 24/10/11	1,027,280	1,314,590	2,341,870	8,861	51,970	2,290,400	500	2,289,900	2.2899
24/10/11 to 23/11/11	1,124,160	836,360	1,960,520	7,498	38,520	1,922,100	100	1,922,000	1.9220
23/11/11 to 22/12/11	311,140	1,221,710	1,532,850	6,071	30,350	1,502,700	200	1,502,500	1.5025
22/12/11 to 23/01/12	347,890	1,166,960	1,514,850	6,880	28,250	1,486,700	100	1,486,600	1.4866
23/01/12 to 05/02/12	89,630	218,750	308,380	2,228	7,980	300,900	500	300,400	0.3004
Total	4,615,570	7,609,900	12,225,470	55,564	263,170	11,968,800	6,500	11,962,300	11.9623

VELPANUR POWER HOUSE

Monitored Period	Gross Electricity Generated, kWh			Aux. Power Consumption, kWh		Electricity Exported to Grid	Electricity Imported from Grid	Net Electricity Exported to Grid	
	UNIT-1	UNIT-2	TOTAL	Measured at Project site (See Note-1)	Calculated (See Note-2)	kWh	kWh	kWh	GWh
24/03/11 to 23/04/11	34,950	525,270	560,220	6,170	13,120	547,800	700	547,100	0.5471
23/04/11 to 23/05/11	0	272,610	272,610	4,759	7,910	265,900	1,200	264,700	0.2647
23/05/11 to 24/06/11	0	0	0	1,583	1,800	0	1,800	-1,800	-0.0018
24/06/11 to 23/07/11	0	0	0	1,468	2,000	0	2,000	-2,000	-0.0020
23/07/11 to 24/08/11	209,670	675,390	885,060	5,669	17,160	868,800	900	867,900	0.8679
24/08/11 to 24/09/11	920,330	1,077,150	1,997,480	8,617	38,280	1,959,500	300	1,959,200	1.9592
24/09/11 to 24/10/11	710,810	1,167,760	1,878,570	8,677	37,170	1,841,600	200	1,841,400	1.8414
24/10/11 to 23/11/11	367,430	1,220,450	1,587,880	7,223	27,180	1,560,800	100	1,560,700	1.5607
23/11/11 to 22/12/11	182,630	1,127,690	1,310,320	5,818	21,520	1,288,900	100	1,288,800	1.2888
22/12/11 to 23/01/12	282,580	1,097,750	1,380,330	7,083	22,330	1,358,100	100	1,358,000	1.3580
23/01/12 to 05/02/12	13,460	297,410	310,870	2,052	6,270	304,900	300	304,600	0.3046
Total	2,721,860	7,461,480	10,183,340	59,119	194,740	9,996,300	7,700	9,988,600	9.9886

MADHAVARAM POWER HOUSE

Monitored Period	Gross Electricity Generated, kWh			Aux. Power Consumption, kWh		Electricity Exported to Grid	Electricity Imported from Grid	Net Electricity Exported to Grid	
	UNIT-1	UNIT-2	TOTAL	Measured at Project site (See Note-1)	Calculated (See Note-2)	kWh	kWh	kWh	GWh
24/03/11 to 23/04/11	30,550	502,320	532,870	5,189	9,670	524,700	1,500	523,200	0.5232
23/04/11 to 23/05/11	0	251,190	251,190	3,693	5,890	246,400	1,100	245,300	0.2453
23/05/11 to 24/06/11	0	0	0	1,441	2,000	0	2,000	-2,000	-0.0020
24/06/11 to 23/07/11	0	0	0	830	1,400	0	1,400	-1,400	-0.0014
23/07/11 to 24/08/11	270,820	505,740	776,560	4,519	12,460	765,100	1,000	764,100	0.7641
24/08/11 to 24/09/11	921,180	983,480	1,904,660	7,607	27,560	1,877,300	200	1,877,100	1.8771
24/09/11 to 24/10/11	968,090	781,070	1,749,160	7,176	28,060	1,721,200	100	1,721,100	1.7211
24/10/11 to 23/11/11	1,176,350	0	1,176,350	4,393	14,950	1,161,600	200	1,161,400	1.1614
23/11/11 to 22/12/11	663,160	579,260	1,242,420	4,632	17,020	1,225,600	200	1,225,400	1.2254
22/12/11 to 23/01/12	608,300	650,370	1,258,670	5,104	14,870	1,244,100	300	1,243,800	1.2438
23/01/12 to 23/02/12	0	246,780	246,780	1,529	3,280	243,700	200	243,500	0.2435
Total	4,638,450	4,500,210	9,138,660	46,113	137,160	9,009,700	8,200	9,001,500	9.0015
Grand Total	11,975,880	19,571,590	31,547,470	160,796	595,070	30,974,800	22,400	30,952,400	30.952

Note-1: Measured aux. consumption includes part of electricity generated by the project activity and electricity imported from grid taken through energy meter located on LT panel at project site. The losses on account of power transformer & transmission

Note-2: Computed based on the gross electricity generation recorded in the plant and electricity exported to the grid & electricity imported from grid readings certified by APTRANSCO & Plant personnel.

Baseline Information

From Carbon Dioxide Baseline Data base, Version 8, January 2013 published by Government of India, Ministry of Power Central Electricity Authority, Government of India. (<https://cea.nic.in/cdm-co2-baseline-database/?lang=en>)

EMISSION FACTORS

Weighted Average Emission Rate (tCO₂/MWh) (excl. Imports)

	2007-08	2008-09	2009-10	2010-11	2011-12
NEWNE	0.82	0.84	0.83	0.81	0.79
South	0.72	0.75	0.75	0.74	0.75735
India	0.80	0.82	0.81	0.79	0.78

Simple Operating Margin (tCO₂/MWh) (excl. Imports) (1)

	2007-08	2008-09	2009-10	2010-11	2011-12
NEWNE	1.01	1.02	0.99	0.98	0.98
South	0.99	0.97	0.94	0.94	0.96
India	1.01	1.01	0.98	0.97	0.97

Build Margin (tCO₂/MWh) (excl. Imports)

	2007-08	2008-09	2009-10	2010-11	2011-12
NEWNE	0.60	0.68	0.81	0.86	0.92
South	0.71	0.82	0.76	0.73	0.85
India	0.63	0.71	0.80	0.83	0.90

Combined Margin (tCO₂/MWh) (excl. Imports) (1)

	2007-08	2008-09	2009-10	2010-11	2011-12
NEWNE	0.81	0.85	0.90	0.92	0.95
South	0.85	0.89	0.85	0.84	0.91
India	0.82	0.86	0.89	0.90	0.94

MONTH WISE PLF

GUNTAKANDALA POWER HOUSE

Monitoring Period	Unit-I (kWh)	Unit-II (kWh)	Total (kWh)	PLF (%)
24/03/11 to 23/04/11	25,960	578,750	604,710	19.68%
23/04/11 to 23/05/11	0	284,780	284,780	9.89%
23/05/11 to 24/06/11	0	0	0	0.00%
24/06/11 to 23/07/11	0	0	0	0.00%
23/07/11 to 24/08/11	446,610	537,350	983,960	32.03%
24/08/11 to 24/09/11	1,242,900	1,450,650	2,693,550	90.51%
24/09/11 to 24/10/11	1,027,280	1,314,590	2,341,870	81.31%
24/10/11 to 23/11/11	1,124,160	836,360	1,960,520	65.88%
23/11/11 to 22/12/11	311,140	1,221,710	1,532,850	57.03%
22/12/11 to 23/01/12	347,890	1,166,960	1,514,850	49.31%
23/01/12 to 05/02/12	89,630	218,750	308,380	24.71%
Total	4,615,570	7,609,900	12,225,470	39.80%

VELPANUR POWER HOUSE

Monitoring Period	Unit-I (kWh)	Unit-II (kWh)	Total (kWh)	PLF (%)
24/03/11 to 23/04/11	34,950	525,270	560,220	18.24%
23/04/11 to 23/05/11	0	272,610	272,610	9.47%
23/05/11 to 24/06/11	0	0	0	0.00%
24/06/11 to 23/07/11	0	0	0	0.00%
23/07/11 to 24/08/11	209,670	675,390	885,060	28.81%
24/08/11 to 24/09/11	920,330	1,077,150	1,997,480	67.12%
24/09/11 to 24/10/11	710,810	1,167,760	1,878,570	65.23%
24/10/11 to 23/11/11	367,430	1,220,450	1,587,880	53.36%
23/11/11 to 22/12/11	182,630	1,127,690	1,310,320	48.75%
22/12/11 to 23/01/12	282,580	1,097,750	1,380,330	44.93%
23/01/12 to 05/02/12	13,460	297,410	310,870	24.91%
Total	2,721,860	7,461,480	10,183,340	33.15%

MADHAVARAM POWER HOUSE

Monitoring Period	Unit-I (kWh)	Unit-II (kWh)	Total (kWh)	PLF (%)
24/03/11 to 23/04/11	30,550	502,320	532,870	17.35%
23/04/11 to 23/05/11	0	251,190	251,190	8.72%
23/05/11 to 24/06/11	0	0	0	0.00%
24/06/11 to 23/07/11	0	0	0	0.00%
23/07/11 to 24/08/11	270,820	505,740	776,560	25.28%
24/08/11 to 24/09/11	921,180	983,480	1,904,660	64.00%
24/09/11 to 24/10/11	968,090	781,070	1,749,160	60.73%
24/10/11 to 23/11/11	1,176,350	0	1,176,350	39.53%
23/11/11 to 22/12/11	663,160	579,260	1,242,420	46.22%
22/12/11 to 23/01/12	608,300	650,370	1,258,670	40.97%
23/01/12 to 23/02/12	0	246,780	246,780	19.77%
Total	4,638,450	4,500,210	9,138,660	29.75%

Guntakandala Project Month wise Fuel Procurement Details form 24 Mar 2011 to 05 Feb 2012					
S.No.	Monitoring Month	Diesel Received	Diesel Consumed	Diesel Balance	Project Emission [PE _v] with Diesel Consumption
		Litres	Litres	Litres	tCO ₂ e
	<i>Stock as on 31 Mar 2011</i>	45			
1	23.03.11 to 31.03.11		5		0.01
2	31.03.11 to 23.04.11	50	6		0.02
3	23.04.11 to 23.05.11		11		0.03
4	23.05.11 to 24.06.11		8		0.02
5	24.06.11 to 23.07.11	50	9		0.02
6	23.07.11 to 24.08.11		7		0.02
7	24.08.11 to 24.09.11		11		0.03
8	24.09.11 to 24.10.11	50	9		0.02
9	24.10.11 to 23.11.11		10		0.03
10	23.11.11 to 22.12.11	50	9		0.02
11	22.12.11 to 23.01.12		8		0.02
12	23.01.12 to 05.02.12	50	9		0.02
	<i>Stock as on 05 Feb 2012</i>			193	0.00
	Total calculation	295	102		0.28
Considered					1.00

Madhavaram Project Month wise Fuel Procurement Details form 24 Mar 2011 to 05 Feb 2012					
S.No.	Monitoring Month	Diesel Received	Diesel Consumed	Diesel Balance	Project Emission [PE _v] with Diesel Consumption
		Litres	Litres	Litres	tCO ₂ e
	<i>Stock as on 31 Mar 2011</i>	42			
1	23.03.11 to 31.03.11		5		0.01
2	31.03.11 to 23.04.11		6		0.02
3	23.04.11 to 23.05.11		11		0.03
4	23.05.11 to 24.06.11		6		0.02
5	24.06.11 to 23.07.11	50	9		0.02
6	23.07.11 to 24.08.11		7		0.02
7	24.08.11 to 24.09.11		8		0.02
8	24.09.11 to 24.10.11	50	9		0.02
9	24.10.11 to 23.11.11		10		0.03
10	23.11.11 to 22.12.11	50	9		0.02
11	22.12.11 to 23.01.12		8		0.02

Madhavaram Project Month wise Fuel Procurement Details form 24 Mar 2011 to 05 Feb 2012					
S.No.	Monitoring Month	Diesel Received	Diesel Consumed	Diesel Balance	Project Emission [PE _y] with Diesel Consumption
		Litres	Litres	Litres	tCO ₂ e
12	23.01.12 to 05.02.12		9		0.02
	<i>Stock as on 05 Feb 2012</i>			95	0.00
	Total Calculation	192	97		0.27
Considered					1.00

Velpanur Project Month wise Fuel Procurement Details form 24 Mar 2011 to 05 Feb 2012					
S.No.	Monitoring Month	Diesel Received	Diesel Consumed	Diesel Balance	Project Emission [PE _y] with Diesel Consumption
		Litres	Litres	Litres	tCO ₂ e
	<i>Stock as on 31 Mar 2011</i>	35	3		0.01
1	23.03.11 to 31.03.11		6		0.02
2	31.03.11 to 23.04.11		10		0.03
3	23.04.11 to 23.05.11		9		0.02
4	23.05.11 to 24.06.11	50	9		0.02
5	24.06.11 to 23.07.11		4		0.01
6	23.07.11 to 24.08.11		8		0.02
7	24.08.11 to 24.09.11		11		0.03
8	24.09.11 to 24.10.11		6		0.02
9	24.10.11 to 23.11.11	50	5		0.01
10	23.11.11 to 22.12.11		9		0.02
11	22.12.11 to 23.01.12		7		0.02
12	23.01.12 to 05.02.12	50	10		0.03
	<i>Stock as on 05 Feb 2012</i>			88	0.00
	Total Calculation	185	97		0.27
Considered					1.00

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
09.0	8 October 2021	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 03.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN).
08.0	6 April 2021	Revision to: <ul style="list-style-type: none"> • Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).
07.0	31 May 2019	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 02.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN); • Add a section on remarks on the observance of the scale limit of small-scale project activity during the crediting period; • Add "changes specific to afforestation or reforestation project activity" as a possible post-registration changes; • Clarify the reporting of net anthropogenic GHG removals for A/R project activities between two commitment periods; • Make editorial improvements.
06.0	7 June 2017	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 01.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN); • Make editorial improvements.
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> • Include provisions related to delayed submission of a monitoring plan; • Provisions related to the Host Party; • Remove reference to programme of activities; • Overall editorial improvement.

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB 70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01.0	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		